

ABSTRACT

A system for facilitating secure network communications includes a security computer system and corresponding software. The security system is utilized in conjunction with a voice browser residing on a server system. A user accesses the network by placing a call to the voice browser system. The voice browser includes a software module that creates a secure connection to the security system. The user provides an identification to the voice browser system that is transferred to and verified by the security system. Once the identification is verified, the user is prompted by the voice browser system to speak a phrase for voice verification. The verification speech signals are transferred from the voice browser system to the security system to verify those speech signals against speech signals of a particular authorized user associated with the identification and stored in a database. When the user is verified, the security system retrieves a user private key and certificate from the database. In response to the user subsequently accessing a web site residing on a secure server, the secure server and voice browser system initiate a secure key exchange. During the key exchange, data packets containing security information are transferred from the voice browser system to the security system for processing, while security information from the security system is transferred to the secure server via the voice browser system. The resulting session key is securely transferred to the voice browser system to facilitate secure communications between the voice browser system and secure server.